

REMARKS

Applicants have now had an opportunity to carefully consider the Examiner's comments set forth in the Office Action of September 13, 2004.

Reconsideration of the Application is requested.

The Office Action

Claims 1 – 21 remain in this application.

Claims 1 – 6, 9 – 14 and 17 – 21 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Naegle et al. (U.S. Publication No. 2001/0033287).

Claims 7, 8, 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Naegle et al.

Comments and Arguments

As a brief review, the Applicants' development relates to a method and/or apparatus for fast computation of associative operations over fixed sized regions of a digital image. An associative operation is selectively performed, at least once, to determine a property of the fixed region. Independent claims 1, 9 and 18 recite the use of an associative operation. Further, the specification recites numerous examples of the implementation of associative operations including those of AND, OR, MAXIMUM and MINIMUM.

As previously argued, the applicants respectfully submit that Naegle does not teach or fairly suggest that an associative operation be performed on an array of pixel values in a fixed region of a digital image. Rather, Naegle discloses a computer graphics system utilizing a super-sampled sample buffer for refreshing a display (paragraph [0022]). The Office Action cites paragraphs [0076] and [0162] of Naegle as examples of the cited reference anticipating the phrase "performing an associative operation on the pixel values" of claims 1, 9 and 18. Paragraph [0076] of Naegle teaches providing various "sample modes for pixels", such as taking multiple samples per pixel or taking a single sample per pixel. Also, paragraph [0162] of Naegle discloses rendering a sample using the samples color, alpha and other attributes. The paragraphs use the word "associated" in terms of information being associated with samples, pixels, bins, or vertices; however, this is a concept unrelated to performance of an associative operation.

An associative operation is understood to be an operation in which the associative property holds true. That is, $(A \# B) \# C = A \# (B \# C)$, holds true for whichever operation (#) is being used. In the present application, the properties of AND, OR, MAXIMUM and MINIMUM are examples of associative properties. The use of the word "associated" in Naegle does not anticipate such "associative" operations. The Examiner places great value on the use of the word "associated"; however, the Examiner's characterization does not take into account that which is apparent based on the teachings of the present application.

The Office Action further cites paragraph [0185] of Naegle, as disclosing the MAXIMUM and MINIMUM operations of the present application. The Applicants respectfully disagree with this assertion. Naegle takes samples and filters them according to how close the sample is to the center of the rendered pixel. The samples closer to the pixel center are given a heavier weight than those samples further from the pixel center. This is not the same as performing MAXIMUM and MINIMUM operations on pixel values of a digital image for a fixed size region.

Naegle does not teach or fairly suggest performing an associative operation to determine properties of regions of images, as described in connection with the presently described embodiments. For at least this reason, the Applicants respectfully submit that independent claims 1, 9 and 18, and respective dependent claims 2-8, 10-17 and 19-21, are distinguishable over the cited art.

CONCLUSION

For the reasons detailed above, it is submitted all claims remaining in the application (Claims 1 – 21) are now in condition for allowance. The foregoing comments do not require unnecessary additional search or examination.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to call Joseph D. Dreher, at Telephone Number (216) 861-5582.

Respectfully submitted,

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Date

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